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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,590	07/01/2003	Timothy B. Dean	ATD00007 9640/126	6129

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EXAMINER	
ROCCHEGIANI, RENZO	

ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/612,590	DEAN ET AL.	
	Examiner	Art Unit	
	Renzo N. Rocchegiani	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *10-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/01/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-9 and 17-22, drawn to a device, classified in class 257, subclass 734.

II. Claims 10-16, drawn to method, classified in class 438, subclass 118.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product may be formed by a materially different process, for example a process that does not involve the zincating step.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Paul Lee on January 29, 2004 a provisional election was made without traverse to prosecute the invention of the product made, claims 1-9 and 17-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-9 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,616,967 B1 (Test) in view of U.S. Patent No. 6,445,069 B1 (Ling et al.).

Test discloses a integrated circuit device wherein a copper contact pad, over a silicon substrate (col. 1, lines 35-40), is covered with a layer of electroless nickel, then a layer of electroless platinum, over the palladium is a layer of immersion gold and over the immersion gold layer is an electroless gold layer. (col. 4, lines 22-30 and col. 5, lines 20-34). Test further discloses that the nickel layer may be about 0.3-0.5 um thick (col. 5, lines 60-62), the palladium layer may be about 0.1 and 0.3 um thick (col. 5, lines 25-28), the immersion gold layer about 40 to 80 nm (i.e. 0.04 to 0.08 um) thick (col. 5, lines 30-31) and the electroless gold layer (referred to as "autocatalytic gold") about 0.5 to 1.5 um thick. (col. 5, lines 31-35). While the disclosure relates to an individual contact

pad, Test discloses that it is applicable to a plurality of contact pads. (col. 1, lines 35-40).

Test discloses that its invention is for copper contact pads and while it does not deny it, it does not state that it would be applicable to aluminum contact pads.

Ling et al. teaches an integrated circuit device wherein a copper contact pad over a silicon substrate is also covered with an electroless nickel layer, upon which an electroless palladium layer, upon which an electroless gold layer is deposited. (col. 4, lines 45-50 and col. 5, lines 1-30). Ling et al. further teaches that this same structure can be formed using an aluminum contact pad as opposed to a copper contact pad. (col. 3, lines 53-56).

It would have been obvious to one with ordinary skill in the specific art to make the device disclosed in Test using an aluminum contact pad as opposed to a copper contact pad, since Ling et al. teaches a very similar structure for the same type of device, since Ling et al. teaches that aluminum may be used instead of copper and still arrive at the same invention thus providing evidence that a worker in the art would have an expectation of success in making the substitution and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of tis suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant will note that the limitation relating to the zinc

displacement plating process has not been addressed in the rejection. The examiner reminds applicant that the office follows the doctrine elucidated in *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), i.e. determination of patentability for a product claim is solely based on the product itself and not on the process of making the product. Nonetheless, to prevent any misunderstanding, applicant's attention is directed to U.S. Patent No. 6,593,221 B1 (Lindgren), specifically to col. 2, lines 45-50, wherein it is taught that a zincating step would facilitate adhesion of electrolessly deposited nickel to aluminum. Thus, such limitation, even if it were considered for patentability determination, would still not render the pending claims allowable over the prior art because there exists sufficient teaching and motivation to make this step obvious.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renzo Rocchegiani whose telephone number is (571) 272-1904. The examiner can normally be reached on Monday through Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached at (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

RNR

February 12, 2004

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